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EXAMINER

CHU, KIM KWOK

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/567,181	Applicant(s) KOISHI, KENJI	
	Examiner Kim-Kwok CHU	Art Unit 2627	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 November 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

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Duplicate Claims

1. Applicant is advised that should claim 3 be found allowable, claim 4 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 5, 6, 7, 11, 17, 18, 19, 23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding Claim 5, line 11, the phrase " $\alpha(v)$ denotes a function of the linear velocity" is vague because the function is not completely expressed. In other words, the feature "a

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function of the linear velocity" is unknown with respect to some un-specified variables.

Similarly, in each of Claims 6, 7, the phrase " $\alpha(v)$ denotes a function of the linear velocity" is vague because the function is unknown with respect to some unknown variables.

In addition, in each of Claims 17, 18 and 19. the phrase " $\beta(v)$ denotes a function of the linear velocity" is vague because the function is unknown with respect to some unknown variables.

Regarding Claims 11, the phrase " $\alpha(v)$ is recorded in the area" is vague because " $\alpha(v)$ " is denotes as a relationship which can not be recorded in the form of marks and spaces. That is, marks and spaces in the recording area is formed by laser power/pulse but not a relationship.

23,

Similarly, in Claim 23, the phrase " $\beta(v)$ is recorded in the area" is vague because " $\beta(v)$ " is denotes as a relationship which can not be recorded in the form of marks and spaces. That is, marks and spaces in the recording area is formed by laser power/pulse but not a relationship.

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Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

*A person shall be entitled to a patent unless --
(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.*

5. Claims 1-4, 8-16 and 20-24 are rejected under 35 U.S.C. § 102(b) as being anticipated by Toda et al. (U.S. Patent 5,642,343).

Toda teaches an information recording method having all of the steps as recited in claims 1-4, 8 and 9. For example, Toda teaches the following:

Regarding Claim 1, the information recording method comprising the steps of: (a) generating a pulse train including a first pulse and a second pulse (Figs. 3a-3c); and (b) forming at least one of a recording mark 23 (Fig. 3c) and a space onto an information recording medium 101 (Fig. 1) by irradiating the pulse train onto the information recording medium 101 (Fig. 1) while rotating the information recording medium 101 at a certain linear velocity, wherein the first pulse is a pulse for forming a central portion of the recording mark (Figs. 3a-3c; a mark is formed by a plurality of pulses), among the recording mark and the space (at least one of the plurality pulses forms the middle

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portion of a mark), the second pulse (Fig. 3b; one of the pulses in the front or back) is a pulse forming a portion other than the central portion (leading or trailing) of the recording mark, among the recording mark and the space, and the step (a) includes a step of determining a power level of the first pulse in accordance with the linear velocity and a power level of the second pulse (Fig. 27; column 18, lines 60-65; column 31, lines 45 and 46)).

Regarding Claim 2, the second pulse includes a third pulse for forming at least one of a leading portion of the recording mark and a trailing portion of the recording mark (Figs. 3a-3c), and a power level of the first pulse becomes equal to a power level of the third pulse in accordance with an increase in the linear velocity (Fig. 3b; several pulses are equal in power levels).

Regarding Claims 3 and 4, the second pulse includes a third pulse for forming one of a leading portion of the recording mark and a trailing portion of the recording mark, and a power level of the third pulse is greater than a power level of the first pulse (Fig. 11).

Regarding Claim 8, the power level of the first pulse is determined in accordance with only the power level of the second pulse (Fig. 3c; all pulses are in a same pulse train with

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related power levels) when the linear velocity is at least one of near maximum linear velocity and near minimum linear velocity (test writing is determined under a rotating recording medium).

Regarding Claim 9, the power level of the first pulse is determined in accordance with only the power level of the second pulse (Fig. 3c; all pulses are in a same pulse train with related power levels) when the linear velocity is near intermediate linear velocity and near minimum linear velocity (test writing is determined under a rotating recording medium within a range of rotating speed).

6. Apparatus claims 10 and 11 are drawn to the apparatus corresponding to the method of using same as claimed in claims 8. Therefore apparatus claims 10 and 11 correspond to method claims 1 and 8, and are rejected for the same reasons of anticipation as used above. Claim 10 however also recites the following limitation which are also taught by the prior art of Toda:

Regarding Claim 10, the information recording medium has an area (recording mark) on which the power level of the first pulse is recorded (Figs. 3a-3c; the location of recording a mark is the area representing the power level of the first pulse).

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7. Apparatus claim 12 are drawn to the apparatus corresponding to the method of using same as claimed in claim 1. Therefore apparatus claim 12 corresponds to method claim 1, and is rejected for the same reason of anticipation as used above.

8. Claims 13-16, 20 and 21 have limitations similar to those treated in the above rejection, and is met by the references as discussed above.

9. Toda teaches an information recording medium having all of the elements and means as recited in claims 22-24. For example, Toda teaches the following:

Regarding Claim 22, the information recording medium for recording information (Fig. 1), wherein: at least one of a long recording mark (Fig. 3c), a short recording mark (Fig. 3c) and a space is formed onto the information recording medium 101 (Fig. 1) by irradiating a pulse train onto the information recording medium while rotating the information recording medium at a certain linear velocity (Fig. 1), the pulse train includes a first peak pulse and a second peak pulse (Fig. 3b), the first peak pulse is a pulse for forming the short recording mark and the second peak pulse is a pulse for forming the long recording mark (Figs. 3a-3c; different marks are formed by the pulses),

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a power level of the first peak pulse is determined in accordance with the linear velocity and a power level of the second peak pulse (Fig, 28), and the information recording medium has an area on which the power level of the first peak pulse is recorded (Figs. 3a-3c; the location of recording a mark is the area representing the power level of the first pulse).

Regarding Claim 23, $\beta(v)$ is recorded in the area, and $\beta(v)$ denotes a relationship between the linear velocity, the power level of the first peak pulse and the power level of the second peak pulse.

10. Claim 24 have limitations similar to those treated in the above rejection, and is met by the references as discussed above.

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Allowable Subject Matter

11. Claims 5, 6, 7, 17, 18 and 19 would be allowable if rewritten to overcome the rejections under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

12. The following is an Examiner's statement of reasons for the indication of allowable subject matter:

Regarding Claim 5, the prior art of record fails to teach or fairly suggest that the power level of the first pulse is determined in accordance with the following formula:

$$P_m = \alpha(v) \times (P_p - P_e) + P_e,$$

the second pulse includes a third pulse for forming at least one of a leading portion of the recording mark and a trailing portion of the recording mark and a fourth pulse for forming the space, where P_m denotes the power level of the first pulse, $\alpha(v)$ denotes a function of the linear velocity, P_p denotes a power level of the third pulse, and P_e denotes a power level of the fourth pulse, and the power level of the third pulse is greater than the power level of the first pulse.

Regarding Claim 6, the prior art of record fails to teach or fairly suggest that the power level of the first pulse is

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determined in accordance with the following formula:

$$P_m = \alpha(v) \times P_e,$$

the second pulse includes a fourth pulse for forming the space, and where P_m denotes the power level of the first pulse, $\alpha(v)$ denotes a function of the linear velocity, and P_e denotes a power level of the fourth pulse.

Regarding Claim 7, the prior art of record fails to teach or fairly suggest that the power level of the first pulse is determined in accordance with the following formula:

$$P_m = \alpha(v) \times P_p,$$

the second pulse includes a third pulse for forming at least one of a leading portion of the recording mark and a trailing portion of the recording mark, where P_m denotes the power level of the first pulse, $\alpha(v)$ denotes a function of the linear velocity, and P_p denotes a power level of the third pulse, and the power level of the third pulse is greater than the power level of the first pulse.

Regarding Claim 17, the prior art of record fails to teach or fairly suggest that the power level of the first peak pulse is determined in accordance with the following formula:

$$P_{ps} = \alpha(v) \times P_{p1},$$

wherein P_{ps} denotes the power level of the first peak pulse, $\alpha(v)$ denotes a function of the linear velocity, and

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Pp1 denotes the power level of the second peak pulse.

Regarding Claim 18, the prior art of record fails to teach or fairly suggest that the Power level of the first peak pulse is determined in accordance with the following formula:

$$Pps = \alpha(v) \times (Pp1 - Pe) + Pe,$$

wherein Pps denotes the power level of the first peak pulse, $\alpha(v)$ denotes a function of the linear velocity, Pp1 denotes the power level of the second peak pulse, and Pe denotes a power level of the pulse for forming the space.

Regarding Claim 19, the prior art of record fails to teach or fairly suggest that the power level of the first peak pulse is determined in accordance with the following formula:

$Pps = \alpha(v) \times Pp1 + Pp1$, wherein Pps denotes the power level of the first peak pulse, $\alpha(v)$ denotes a function of the linear velocity, and Pp1 denotes the power level of the second peak pulse.

The features indicated above, in combination with the other elements of the claims, are not anticipated by, nor made obvious over, the prior art of record.

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Related Prior Art

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Ushiyama et al. (7,016,282) is pertinent because Ushiyama teaches a pulse train for recording marks on a recording medium.

Miyamoto et al. (6,236,635) is pertinent because Miyamoto teaches a pulse train for recording marks on a recording medium.

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14. Any inquiry concerning this communication or earlier communication from the examiner should be directed to Kim CHU whose telephone number is (571) 272-7585 between 9:30 am to 6:00 pm, Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa Nguyen, can be reached on (571) 272-7579.

The fax number for the organization where this application or proceeding is assigned is (571) 273-8300

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished application is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9191 (toll free).

/Kim-Kwok CHU/
Examiner AU2627
March 11, 2010
(571) 272-7585

/HOA T NGUYEN/

Supervisory Patent Examiner, Art Unit 2627